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ABSTRACT

One of a series of instructional booklets designed to introduce adult education program planners to the basic concepts integral to and alternative strategies for conducting needs assessments, this instructional booklet deals with determining how to summarize information. Described first is the relationship of the process of determining how to summarize information to the entire needs assessment process. Following a discussion of the concept of filtering need information, criteria are suggested for use in data screening procedures. Next, procedures are provided for condensing information. Also examined is the process of organizing data into meaningful clusters to facilitate appropriate subsequent action. (MN)

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AN INTRODUCTION TO NEEDS ASSESSMENT

Special Community Service
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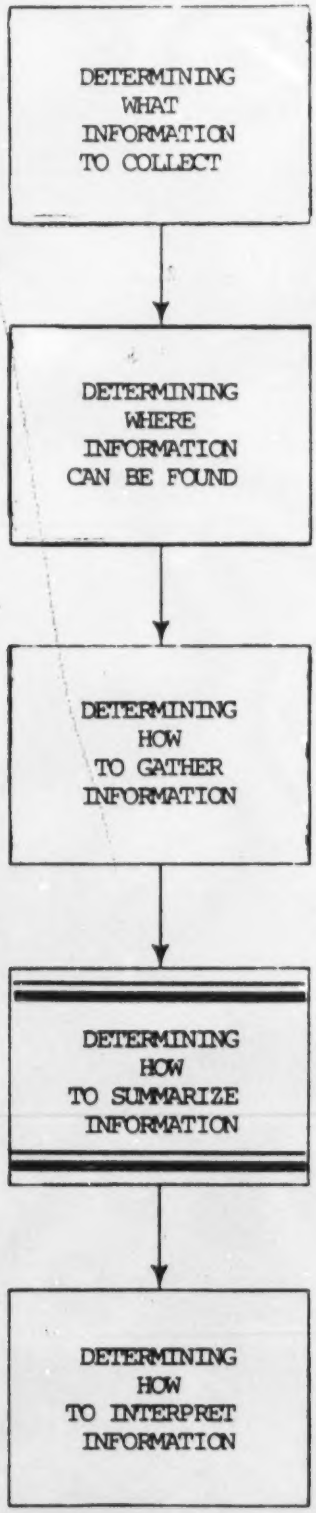
Final Report.


DETERMINING WHAT INFORMATION TO COLLECT
DETERMINING WHERE INFORMATION CAN BE FOUND
DETERMINING HOW TO GATHER INFORMATION
DETERMINING HOW TO SUMMARIZE INFORMATION
DETERMINING HOW TO INTERPRET INFORMATION

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DETERMINING

HOW

TO SUMMARIZE INFORMATION

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SERIES PREFACE

This instructional booklet is one of a series prepared by the Special Community Service and Continuing Education staff at Texas A&M University. Its purpose is to introduce a diverse body of adult education program planners to basic concepts integral to and alternative strategies appropriate for conducting needs assessments. A broad base of research and information relevant to practice has been tapped in the development of the series.

This series is not in its final form but is rather "in development" as prepared for one-on-one testing in conjunction with a collection of adult education practitioners. Refinements are to be made subsequent to one-on-one, small group and field testing.

Recognition is given to those agencies and individuals who have contributed to the development of this series:

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Participants in the pilot test activities for generating case study applications: Mr. David R. Chagoya, Mr. Robert Felder, Ms. Alice Franzke, Mr. Jon Johnson, Sr. Maria J. Leavy, Mr. Jose D. Leza, Lt. Col. James V. Mahoney, Jr., Mr. G. M. Milburn, Jr., Capt. William J. Schrank, Ms. Lois Soefje and Mr. Charles Weichert.

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DETERMINING HOW TO SUMMARIZE INFORMATION

Introduction

Analogy

This booklet is not a lot unlike spring cleaning. If you can identify with this near universal ritual of modern day America, you should have a good experiential and intuitive grasp of the type of thing we are encouraging in this instructional booklet.

Let us suppose that it is the first day of spring cleaning mania and that you have decided to begin with the garage.

Well, here you are faced with a great array of, let us say, "items", for want of a more suitable word. You are faced with this array which represents what you very carefully and studiously have decided to collect over the years. They are items which, regardless of their present value, were imbued with meaning at the time that you decided that they were what you wanted. Needless to say, you went to great trouble and expense to obtain in many different ways these items from many different sources and corners of the globe. You obtained some of them as heirlooms from past generations of relatives; you collected other of the items at garage sales no less; others you may have bartered for by trading a much prized skill in return; and some, your "handyman" or "handywoman" may have created out of the sweat of the brow. But at any rate, here it is. What now? It has gradually

become the all engulfing monster and has over time grown to ill advised proportions. Furthermore, it is all over the place so that even what might still be of value is unable to be used because it lies hidden in a mountain of things.

Well, what most "order bugs" do is clear some shelves, resale tables, precious closets and vacuous cartons; get the dump cans handy; and set to work. As you not-so-fondly handle most of the items, decisions must be made. First on the order is to determine if you keep it, discard it or save it for resale. That which no longer serves your purposes generally gets tossed unless you can identify friend, foe or relative who may want it; and then it goes into a specially marked carton. Or possibly if it is at all salvageable, it goes onto the resale table. After those items are gotten out of the array, you are left with what you genuinely feel has meaning for you and can serve some utilitarian or aesthetic purpose which you have. For example, you are left with five partially filled cans of latex paint in the colors of white, cream, ivory, blue and fuscia. Do you put them away separately for they are perfectly good, or do you make an effort to combine some or all of the cans for a garage repaint job. Well, just like the paint, some items can and possibly should be combined, and may be so combined without harming an otherwise perfectly good item. Perhaps all of the old and worn children's undies and sis' well run hose will be put together as filling for the stuffed dolls which are to be made for the Church bazaar in the fall. Other things should be left as they are and finally stored on shelves with like items for easy use and retrieval as needed down the road: the tools, the toys, the paints,

the solvents, the cleaning equipment and the lawn furniture.

This process of tossing, combining and organizing things goes on in the needs assessment process also. After you have gone through the process of collecting the information which you felt would be meaningful for future use, you now need to put it in order for such future use.

Purpose

In this booklet we will present the procedure for organizing the information that you have collected for your needs assessment. We will help you to filter out certain data that evolved from the information collection processes so that only the most critical data is retained. You will also be advised of ways to transform and condense the need data in order to avoid information overload. Last but not least, we will show you methods for clustering or categorizing information into a format that is most appropriate for your institutional use.

Linkage

In Booklet Three, Determining How to Gather Information, we have discussed some possible methods for collecting information from your authorities and your target population. We also have pointed out some criteria that you should consider in retrieving relevant data from the available printed information. The logical sequence for this booklet then, is to assist you in summarizing the information you gather. You will learn to filter, condense and cluster the need data you collect. Following this, in our last booklet, Determining How to Interpret Information, we will shift our attention to the identification of forces that affect needs. That is, you will learn how to interpret information and thereby diagnose needs.

Rationale

Once you get your data gathered, it is important that you exercise an effective and discriminating selection process with the data so that only critical needs are brought to attention for subsequent analysis and treatment.

First, it is important to retain only critical data; filter out information either that fails to indicate the existence of a need, or that reveals the existence of a need that is presently small and is not expected to worsen, or that reveals the existence of a need of major proportions but which does not appear to favorably or adversely impact other needs. In such a filtering process, you will be able to save yourself from retaining an abundance of information not judged critical to your needs assessment undertaking. Next, it is important to simplify your information by combining like groups together and expressing them in some global terms. This will reduce or streamline your analysis and will not destroy your data. You can condense information collected either on the basis of the sources of your information, the population sub-groups, or the various goals addressed in the needs assessment. In applying this process of condensing, relevant need information will be efficiently retained for later use. Finally, it is important to present the needs assessment information in a form that is most relevant, easily understood, and directly addresses the purposes of your needs assessment. In other words, need data should be presented in a format that is well organized and will facilitate your use of the information.

Filtering Need Information

Concept

In this section, we are going to orient you to the concept of filtering need information and will suggest some criteria to consider in the data screening procedure.

Filtration is defined as the process of selectively screening out certain data on the basis of clearly defined criteria for the purpose of removing non-critical data from the information system. It is a process in which you discard information gathered that is not usable. In doing this, of course, some criteria must be identified to facilitate the screening process. We propose that you establish your standards based on four criteria: first, the indication of the presence of a need; second, the magnitude of the indicated need in terms of the discrepancy between the present state and the desired state of affairs; third, the immediacy of the identified need in terms of an anticipated pattern of change over time; and fourth, the instrumental value of the need as related to resolution of other needs.

Say, for example, that the county extension agent in Grimes County conducted a survey of the following needs of the senior citizens within the county:

1. adequacy of kin and friendship circles,
2. adequacy of personal and public transportation,
3. adequacy of daily diet,
4. adequacy of daily physical activity,
5. adequacy of economic resources,
6. adequacy of household maintenance,
7. adequacy of medical care, and
8. adequacy of preparation for "single" living.

Having gathered the data in these eight areas, the agent has found data that differs either for the entire senior group, or pockets of

seniors such as the over sixty widows, or the hispanic elderly receiving public assistance, or the new members of the county. In each instance, the agent needs to decide on retaining or discarding the data by asking four questions. First, is there a need? Second, is it a large or a small need? Third, does it appear that the need is going to resolve itself? Fourth, is this need preventing or facilitating the resolution of other needs?*

Process

Now, we will describe the four steps needed to filter need information according to the four criteria we proposed.

The first task of the filtration procedure is to discard information which indicates no need. All raw data which indicates that no need exists are removed from the data bank. Not all the information accumulated during the data gathering process will be pertinent or even relevant. Information you collect may fail to indicate the presence of a need either for the target population as a whole or for any subportions of the population. If you have conscientiously exercised care in the early stages of the needs assessment in identifying only those goals assumed to be both important and unrealized, you will probably achieve only a slight reduction in bulk by this task. If, as the director for the adult vocational programs in Warren I.S.D., you send out questionnaires to a group of high-school drop outs ages sixteen through twenty-one, and try to pinpoint the vocational needs of this target population, you may find that none of the respondents who had dropped out before completion of the tenth grade indicated an interest in going back to school for formal academic training in reading,

writing, arithmetic or to complete their G.E.D. Instead, 90% said they would prefer some short-term courses in specific vocational skills, like welding or carpentry. All of the respondents in this group also indicated that they were holding down some kind of regular job. In this case, it would be appropriate for you to drop the raw data relating to formal schooling and retain the vocational need data for this group as indicated. It is important to note that for non-respondents and for respondents who have completed the tenth grade, academic needs may have emerged. Further, had data been collected from authorities such as personnel officers in area businesses, state and independent employment agencies, and high school and community college counselors, a very different assessment may have resulted for the early high school drop out group and a critical need may have been indicated. It is important to respect the integrity of both groups of key informants and during the program building phase to deal creatively with the discrepancies between the two groups.

Secondly, you should retain or discard the need data according to the magnitude of the discrepancy between the present state and the desired state of affairs. You can expect to find some instances in which a need is found to exist, but the discrepancy identified between the present state and the desired state of affairs is small in an absolute sense. All other things being equal, a larger discrepancy indicates a need of greater import. For example, as chairman of the board of the San Angelo Society of Culture and the Arts you are about to undertake a feasibility study concerning the establishment of a regional public museum. You are interested in determining if there

is a need for a museum in your area and if so, what type of museum. As part of your study, you have determined that these are no other public museums within a fifty mile radius of San Angelo.

Your initial survey of the general community was conducted in the San Angelo Daily Times. People were asked to complete the survey and either mail it to the society or bring it in to any of the businesses within the community. Ninety percent of the households completed the questionnaires. All households agreed that a community museum supported by volunteer efforts, patron fees and foundation support would be desirable for the region. The following breakdown of interest was revealed by the survey:

98%	History of Greater San Angelo
82%	Industry in San Angelo
80%	Arts and Crafts of the Region
46%	Natural Science/Geology and Life Forms in the Region
24%	Anthropology in the Region
12%	Art Museum
7%	Science and Technology Museum

The board has decided, based upon survey response, to proceed further in testing the feasibility of a Museum of Greater San Angelo which would include: history, industry, arts and crafts, and natural science. Interest in art, anthropology, and science and technology was not judged to be great enough to warrant development at this time.

Third, you would select, discard or filter the need data in terms of an anticipated pattern of change over time. A pattern of rapid deterioration indicates a sense of immediacy and signals the presence of a need of greater import. A stabilized state of need, or a need tending to ameliorate, may be judged as generally of lesser immediacy and consequently of lesser import. For example, if the juvenile delinquency

rate of Waller County was 23% of the youth population in 1960, but raised to 28% in 1970 and 32% in 1980, you may quickly come to the conclusion that a segment of the youth in this county has a problem. The Sherriff's Department, the Municipal Police Departments and concerned citizens see youth delinquency as a major and worsening problem with no end in sight unless programs to remediate the problem are undertaken. The major data gathered in their study subsequently revealed a critically escalating delinquency rate among twelve to sixteen year olds, especially young boys, minorities, products of broken homes, drop outs and on public assistance as well as an alarming increase in the crime rate for both boys and girls within the highly affluent community.

Fourth, you would filter the need data in terms of their instrumental value to the resolution of other needs. Those needs that are linked to other needs and which is remediated would contribute positively to the resolution of a number of other needs would deserve immediate attention. In other words, those needs that might not be instrumental to the resolution of other needs could be filtered out for the time being especially if they are likely to be resolved by addressing other needs first. Say, as the Program Chairman for the Abilene County American Association of University Women, you find the following needs from your assessment:

60% Rural women are illiterate in the county
40% Women in the county surviving on public assistance in the county
12% Women with a college degree in the county
72% Women never held a job for pay in the county
67% Women lack a high school diploma in the county
80% Women anxious to move into job market

in the county
92% Women report no marketable skill in the county

It is possible that the basic literacy needs, the general educational needs and the pre-vocational and vocational needs are indeed critical. Further, their resolution may likely change the unemployment and public assistance rate significantly. Therefore, the "foundation" needs have been selected as the focus for future program emphasis in the five year goals plan for the Association.

Thus, the Principle for Practice is that needs assessors should filter information according to the presence or absence of a need and according to its magnitude, immediacy and instrumentality.

Condensing Need Information

Concept

Let us now suppose that you have successfully filtered all non-critical information out of your data base. What you have remaining may or may not be in the best form for utilization. But, analysis, storage, reporting and manipulation of raw data can frequently be greatly facilitated by its translation from one form to another.

Condensation is defined as the process of translating or changing data from one form to another to further reduce information overload and enhance the decision-making process. Condensation is sometimes used interchangeably with the term data reduction, and it potentially results in data expressed as an aggregate or global need rather than as many discrete as smaller needs. Condensation is critical and central to reduction of information overload for all information systems. You should keep in mind, however, that although data cannot be condensed

in all instances nor in an indiscriminate fashion, there are situations when this procedure is appropriate. To be a maximally effective and efficient information system, it is not sufficient only to retain that need data judged important in terms of magnitude, immediacy and instrumental value, but also to condense or compress the need data to further facilitate the decision-making processes for the users.

For example, the director of a senior center might condense the following senior citizen needs: 40% nutritional inadequacy, 60% physical activity inadequacy, 37% preventive medical care inadequacy and 67% first aid skills inadequacy. There is a 51% need in health related areas among senior citizens. Similarly, other data may reveal a 92% economic need among minorities and among widowed members of the senior community. Or, your data may reveal a 72% need in social services as described by select authorities and a 78% need in the same services as described by the target group. In this instance, the director may condense these data into a 75% need since both groups' assertion of the need are almost identical and certainly highly compatible in nature.

Process

The information for the needs assessment process as we describe it can be condensed in at least three major ways.

First, you should check the need data as they relate to the sources of your information. In other words, you should look over the needs information that you gather from the authorities, your target population, or printed information. You should ask yourself if they are the same, similar or different. Information from various sources that is essentially identical or is highly associated can be compressed

into a condensed form. For example, if you are the training officer of a large corporation and are doing a survey to find out the continuing education needs for all personnel with management status, you may approach the executive board, the president and the personnel manager to seek their opinions. These are your authorities. You may also ask all managers in the corporation to suggest training programs that they would like to see offered and from which they themselves would benefit. If both the authorities and the managers identify five common training activities which they consider to be essential, in addition to three distinct items suggested by the authorities, you would simply compile a single list of the common activities rather than repeat the items under the headings of authorities and managers.

Second, you may be able to group your need data according to some population characteristics that indicate some differences in the identified need for particular subgroups. So, if, as the director of the Arlington Recreation Department, you are going to study the social needs of young adults ages 16-25, you may probably find your need data falls rather naturally into distinct categories according to sex, age groups, ethnicity and marital status. For example, young married couples want opportunities for kicker and square dancing group activities, while the single young adults want opportunities to form theatre production teams. Your data may therefore be able to be condensed into two need statements rather than a great many need statements.

Third, you can condense your need data according to some major goals. For example, if, as the director of Community Education in Belmont ISD, you are going to study the vocational needs of the Hispanic

ethnic minority in your district, three possible goals for the study might have been identified: to increase vocational skills, to upgrade prevocational skills, and to cultivate good work habits. It is understood that you have used several measures of need for each of the three goals developed. However, in order to simplify and reduce the absolute mass of the data which you have collected, you explore the possibility of condensing the data into some global statements of need, in this instance, three global needs in the goal areas identified for your study.

Data reveal the following needs: 20% need in adequacy of formal academic schooling, 50% need in adequacy of marketable skills, 47% need in adequacy of vocational training and 92% need in adequacy of work experience. These data may possibly be condensed into a 52% need in vocational skills. Similarly, data may have been collected and varying degrees of needs revealed in terms of punctuality, proper dressing code, appropriate manners in the work setting, responsible completion of work assignments, ability to take orders in the work place, and ability to get along with others. These data may lend themselves to being condensed into a single statement of need for cultivation of good work habits.

It is necessary, however, that you exercise care against the liberal use of the method of condensation. In all forms of data condensation you will have to compromise the individuality and specificity of need data collected against the simplicity and manageability of data collected. The benefits of the condensation process must outweigh the costs or the process should not be employed.

Thus, the Principle for Practice is that needs assessors should condense information according to sources of information, population characteristics and goals.

Clustering Need Information

Concept

Now that you have completed manipulating the data that you had collected, you are ready to begin preparing the results of the study for presentation to the interested parties. Whether you terminate the needs assessment at this point of the process with simply the identification of a number of needs of certain populations or sub-populations, or whether you carry the process through to the interpretation of the causes of those needs, you should group the needs into meaningful clusters in order to facilitate appropriate subsequent action.

Clustering is defined as the process of grouping need information. Clustering is a process of organizing information that has already been filtered and condensed. The purpose of clustering is to provide for the presentation of data in formats most appropriate for the institutional users of the data. Some professions working in the education of adults are involved with institutions whose function is defined primarily in terms of one or several goals or missions and only nominally in terms of subgroups or large groups within the community. Other practitioners, however, are involved with institutions whose function is defined primarily in terms of subgroups or target groups within the community and may provide services directed toward the attainment of several or many broad goals for their target group. You can accomodate these different perspectives by clustering the need

data according to both the goals and target groups.

Process

There are two major ways, as we suggested above, that you can group your need information when presenting the needs you have identified in your study for your own or other interested organizations.

First, you can group the need information according to the goals which you identified for your study. The Director of the Community Education School, thus, might cluster the data derived in the needs assessment according to the following two goals:

Need to Attain a High School Diploma or G.E.D.

57%	Hispanic women
100%	High school drop outs age 14-25
15%	Members in retirement centers
36%	Displaced homemakers.

Need to Attain Marketable Vocational Skill

60%	Adults in District 1 and 7
96%	Displaced homemaker
64%	High School drop outs
69%	Recently physically disabled
97%	Mentally retarded in the community.

This type of listing will enable the director as he moves to the analysis or interpretation of these needs to both avoid overgeneralization and to look for specific multiple causes for academic and vocational needs to exist in varying populations. Or if, on the other hand, the director is now about to begin programs, he may decide on a path of co-sponsorship of the vocational programs with the community college and vocational technical institute in his region. Thus, this manner of listing will enable various actions to be taken relative to the goals identified as important and unrealized on several levels within his community.

Second, it also may be advantageous to group the need information according to populations or sub-populations in your needs assessment undertaking. You will then be clustering or organizing the needs relating to many different goals under specific sub- or target groups in your population. Referring back to the previous example, the following is a conceivable ordering according to target groups.

Needs of Displaced Homemakers

36%	High school diploma or G.E.D.
96%	Marketable vocational skill
67%	Pre-vocational competence
84%	Social/emotional adjustment concerns

Needs of Members of Retirement Centers

15%	High school diploma or G.E.D.
84%	Recreational skills
92%	Religious involvement
64%	Physical exercise
70%	Social involvement with the community

This type of listing enables the director to plan concerted and integrated programs for specific target groups and their myriad needs. It may even highlight alternatives for remediating the social/emotional adjustment concerns of the displaced homemaker through meeting the needs for social involvement with the community of the members of retirement centers.

Thus, the Principle for Practice is that needs assessors should cluster information collected according to goals and target populations.

Summary

We have provided you with the process for summarizing the information you have collected by filtering, condensing, and clustering the data into a workable format for your needs assessment.

Filtration is a process for selectively screening out certain data that are not critical to your study. You should discard information that indicates the absence of a need, a need that is small in magnitude, a stable need or a need state that is tending to improve, or a need that has little instrumental relationship to the resolution of other needs.

Condensation is a procedure of translating or changing data from one form to another in order to reduce information overload. Information collected can be condensed on the basis of like sources of information, population characteristics or goals.

Finally, clustering is a process of grouping similar data into organized formats. It facilitates the presentation of results of your study and enhances the decision-making processes. It is advised that needs assessors should cluster information collected according to goals and according to target populations.

In order to interpret your findings effectively to your institution or other interested groups, you may want to explore forces or situations that are at work causing the needs to exist. The definition of these forces and their effect upon the needs is the main theme of our last booklet, Determining How to Interpret Information.